



Application of: Kajander et al

Art Unit: 1771

Serial No. 09/923,932

Case Docket No. 7144

Filed: August 7, 2001

Examiner: Terrel Morris

**For: Method of Making Coated Mat Online and Coated
Mat Product**

Commissioner of the Patents & Trademarks
Washington, D. C. 20231

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Dear Sir:

Supplemental Information Disclosure Statement

The following references have become known to the Applicants and Applicants' attorney. These references involve methods of making fibrous mat products having a foam layer or methods of making coated nonwoven fibrous mats.

1. U. S. Pat. No. 3,874,980 - Richards et al - Issued 4/1/75

This reference teaches applying a foam precursor polymer onto a glass fiber mat and foaming the polymer against the mat and another mat placed on the other side of the polymer while the two mats are restrained by conveyor belts to form a glass fiber mat faced foam insulation board. This patent neither teaches nor reasonably suggests the presently claimed invention.

2. U. S. Pat. No. 4,028,158 - Hipchen et al - Issued 6/7/77

This patent teaches a foam layer faced with a fiber glass mat. In the method used to produce this composite, a foam forming mixture is placed between two glass fiber mats and this sandwich is passed between nip rolls to force some of the foaming mixture into the pores of the mats such that the finished composite is integrally bonded together. This patent neither teaches nor reasonably suggests the presently claimed invention.

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3. U. S. Pat. No. 4,073,997 - Richards et al - 2/14/80

This patent teaches a composite panel comprising a foam core with one face bonded to a fiber board comprised of glass fibers bonded together with a modified phenolic resin and the other face bonded to a glass fiber mat comprised of glass fibers fibers bonded together with a modified phenolic resin. The foam is bonded to the glass fiber mat by foaming taking place against restrained mat and board. This patent neither teaches nor reasonably suggests the presently claimed invention.

4. U. S. Pat. No. 4,186,236 - Heitmann - Issued 1/29/80

This patent teaches an asphalt emulsion coated fiber glass mat used as a facer sheet on a foam board. The asphalt emulsion prevents the urethane polymer foam precursor from bleeding through the mat during the foaming process. The patent also teaches foaming against a conventional fiber glass mat and that doing so results in the urethane foam bleeding through the mat resulting in getting on the equipment and causing downtime because of the need to frequently clean the equipment. This patent neither teaches nor reasonably suggests the presently claimed invention.

5. U. S. Pat. No. 4,283,457 - Kolsky et al - Issued 8/11/81

This patent teaches casting a foamable polymer such as urethane, nitrile, neoprene, vinyl, natural rubber, styrene butadiene rubber or the like on the surface of a glass fiber needled mat, impregnated with a binder like vinyl chloride or polymers of vinyl chloride or flame retardant acrylics for integrity, and subsequently blowing the polymer into an open cell foam forming an intimate bond between the foam and the fiber glass mat to form a laminate. The laminate is flexible and supplied in roll form to be applied like wallpaper to uneven surfaces. This

patent does not teach or reasonably suggests the presently claimed invention.

6. 4,596,737 - Werbowy et al - 6/23/86

This patent teaches coating a glass fiber mat in which the glass fibers are bonded together with a UF or phenolic resin with a soft polymer to increase the flexibility and ductility of the mat. Many types of polymer coatings are disclosed including, but not limited to butadiene-styrene, butadiene-acrylonitrile, chloroprene, isopropene, neoprene, isobutyl rubber, vinyl-pyridine containing terpolymers, and acrylic polymers. A preferred polymer coating was ethylene-vinyl acetate-vinyl chloride terpolymer. The coatings are applied in latex form to one surface of conventional dry glass fiber mats, off-line, using any known coating equipment and the coating is then dried and cured. This patent neither teaches nor reasonably suggests the presently claimed invention.

7. 5,102,728 - Gay et al - 4/7/92

A dry web of predominately glass fibers is coated off line with an aqueous coating mixture comprising at least one mineral pigment, a first binder comprised of a polymer latex adhesive, and a second binder comprised of asphalt emulsion, with the total of both binders making up no more than 24 dry wt. percent of the coating composition. The polymer latex can be SBR, styrene butadiene styrene, ethylene vinyl chloride, polyvinylidene chloride, modified PVC, polyvinyl alcohol, ethylene vinyl acetate and polyvinyl acetate. The mineral filler has a particle size such that 95 percent or more are finer than 325 mesh, and can be clay, mica, talc, limestone, gypsum, aluminum trihydrate, antimony oxide, MgO, bentonite clay, dolomite and diatomaceous earth. The mat is coated to produce a non-porous mat for use as a roofing or sidewall underlayment, a facing for applying a foaming mixture to make faced foam insulation board. Nothing in this reference teaches or reasonably suggests the presently claimed invention.

8. 5,112,678 - Gay et al - 5/12/92

This patent disclosure is very similar to that in 5,102,728 described just above. The main difference is that in this patent the second binder is not asphalt emulsion, but instead is an inorganic adhesive such as calcium oxide, calcium silicate, magnesium oxychloride, magnesium oxysulfate or aluminum hydroxide. Also, the coated mat is used to make insulating foam board and some of the claims are so directed. Nothing in this reference teaches or reasonably suggests the presently claimed invention.

9. U. S. Pat. No. 5,527,598 - Campbell et al - Issued 6/18/96

This patent teaches a composite sandwich for use in aircraft. The composite is made by pressing a layer of glass fiber mat and a layer of glass fiber board, both impregnated with a phenolic resin, at elevated temperature against a layer of cellular polymeric imide foam. This patent does not teach or reasonably suggest the presently claimed invention.

10. 5,698,302 - Brandon et al - 12/16/97

A mat of predominantly glass fiber is coated off line by extruding a layer of a polymer onto the mat or by laminating a film of polymer to the mat. The polymer can be polypropylene, polyethylene, blends of the two, copolymers of ethylene and/or propylene with other co-monomers such as ethlenically unsaturated C 4-8 hydrocarbons, acrylic and methacrylic acid, styrene, vinyl acetate, and blends thereof. Other suitable polymers are polyesters, polystyrenes, polycarbonates, polyamides and blends thereof. The coated or laminated mat is particularly useful as a facer in the manufacture of faced foam insulating board. The claims are all drawn to a foam laminate. This patent does not teach or reasonably suggest the presently claimed invention.

11. 5,698,304 - Brandon et al - 12/16/97

The disclosure of this patent appears similar or the same as the previous patent and does not teach or reasonably suggest the presently claimed invention.

12. 5,955,013 - Grinshpun et al - Issued 9/21/99

This patent, a continuation of 5,807,514, teaches making a glass fiber faced foam structure having a solid resin shell between the foam and the mat. The structures are made by spraying a defoaming agent is applied to the inner surface of the mat before the foam or foamable mixture is applied to the mat. The defoaming agent either prevents the polymer from foaming or breaks down the foam next to the mat allowing the polymer to partially enter the mat and also for a polymer layer to form next to the mat. A catalyst can also be applied to the mat to cause the defoamed polymer to cure before the polymer penetrates to far into the mat. This patent neither teaches nor reasonably suggests the presently claimed invention.

13. 5,965,257 -Ahluwalia - 10/12/99

This patent discloses a coated article in which the coating, consists essentially of a binder and a filler material, has the same ionic charge as the ionic charge of the substrate and that does not bleed through the substrate. The substrate is described as any reinforcement that can withstand the processing temperature of the coating including glass fibers and many other types of ceramic, natural and polymer fibers. The filler is class F fly ash, charged calcium carbonate, ceramic microspheres, or any blends of these three materials with ceramic microspheres being a preferred ingredient. Any suitable binder is acceptable including latexes of butyl rubber, neoprene, PVA, polyurethane, vinyl chloride copolymers, nitrile rubbers, polyvinyl acetate copolymers, SBR, and styrene butadiene styrene. An acrylic latex is a preferred binder for the coating. The substrate can be

coated on one or both surfaces. The coating can contain other functional ingredients such as water repellant, anti-fungal, anti-bacteria, dyes, pigments, etc. The other functional materials can also be sprayed onto the coated substrate during processing. This patent does not teach or reasonably suggest the presently claimed invention.

14. U. S. Pat. No. 6,187,697 B1 - Issued 2/13/2001

This reference teaches making a multi-layer nonwoven mat wherein fibers, particles or a mixture of the two is included in a binder for the mat and applied onto a wet nonwoven fibrous membrane wherein most of the particles and/or fibers remain on top of the wet fibrous membrane to form a distinct layer of the multi-layer mat. This reference does not teach or reasonably suggest the presently claimed invention.

15. U.S. Pat. No. 6,365,533 - Issued April 2, 2002 - Filed 8/18/99

This reference teaches a foam coated mat in which the foam layer has a very low permeability. This foam coated mat is made by coating conventional dry fibrous mats with the fibers bound together with a cured phenolformaldehyde, melamineformaldehyde, and/or ureaformaldehyde resin, or mixtures thereof with a prefrothed or prefoamed composition. This reference does not teach or reasonably suggest the presently claimed invention.

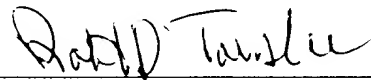
16. U.S. Pub. Patent App. No. 20030032351 Pub. 2/13/2003

This reference teaches a foam coated mat in which the foam layer has a very low permeability. This foam coated mat is made by coating conventional dry fibrous mats with the fibers bound together with a cured phenolformaldehyde, melamineformaldehyde, and/or ureaformaldehyde resin, or mixtures thereof with a prefrothed or prefoamed composition. This reference does not teach or reasonably suggest the presently claimed invention.

17. WO 00/76932 PCT/US 00/14101 Published 12/21/2000

This reference teaches coating dry, conventional fiber glass mats bound with a cured resin binder with a continuous film derived from a foam having a density of about 1.5-7 pounds per gallon to make or treat a facer for gypsum board, drywall, or polyisocyanate insulation board. This reference does not teach or reasonably suggest the presently claimed invention.

Respectfully submitted,

A handwritten signature in cursive script, appearing to read "Robert D. Touslee", written over a horizontal line.

Attorney for Applicants

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303-978-3927